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ABSTRACT

This paper proposes the idea that dissertations may be used as data in a model for analyzing the research aspects of the graduate program. The model simply states that characteristics of dissertation research provide estimates of research patterns and training in the college of education. The data from such an analysis can show the professional interests of the college faculty, the ideas that are prevalent during a given time period, and the technology known to be sufficient to solve the problems posed. By omission, they provide indicators of the gaps between questions that need to be answered and questions that are being answered. While this type of information is available in the professional literature, dissertations provide a more complete picture of the total body of graduate student research for one institution. (Author)

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A Comparison of Selected Variables from the 1965 and 1970 Doctoral Dissertations of the College of Education, University of Maryland

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A COMPARISON OF SELECTED VARIABLES FROM THE 1965 AND 1970 DOCTORAL DISSERTATIONS AT THE UNIVERSITY OF MARYLAND*

Sylvia C. Auton

PROBLEM

Who does much of the research in a college of education? Collectively, graduate students. In fact, research in education is contributed to in large measure by student work. The import of student generated studies, primarily master's and doctoral dissertations, is thus carried beyond the fulfillment of academic requirements to the arena of development of a field in total.

Apart from this, in a more self-serving sense, dissertation research has importance for a college of education because it carries the indirect approval of the college, through the various research committees, and because the reputation of the college is enhanced by the publications of its students. These student publications are generally dissertations.

In addition, data collected about dissertations can be used by members of the college in many ways: a department sharing research based ideas internally, departments communicating basic interests, faculty members finding colleagues interested in similar constructs or methodologies, students searching for promising variables or test instruments, a measurement and statistics department analyzing the needs for research methodology dissemination and training, and directors of graduate education reviewing the goals for the creation of competent investigators.

For such reasons, dissertations are some of the most inportant products of a college. Therefore, they constitute an important source of data for

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studying the research directions and contributions of the college, for communicating ideas and results and for evaluating the research component of graduate education.

This paper proposes the idea that dissertations may be used as data in a model for analyzing the research aspects of the graduate program. The model simply states that characteristics of dissertation research provide estimates of research patterns and training in the college of education. The data from such an analysis can show the professional interests of the college faculty, the ideas that are prevalent during a given time period, and the technology known to be sufficient to solve the problems posed By omission they provide indicators of the gaps between questions that need to be answered and questions that are being answered. While this type of information is available in the professional literature dissertations provide a more complete picture of the total body of graduate student research for one institution.

CONSTRUCTION OF A RESEARCH INSTRUMENT

Three kinds of variables can be extracted from dissertations:

---those external to the research, e.g., age of student;

---those internal to the research but not subject area dependent, e.g. number of research hypotheses;

---those subject area dependent, e.g. relative importance of research hypotheses.

To fully realize the benefits of dissertation analysis, all three classes of variables should be considered. By necessity, however, the interesting and important variables in the third category can only be investigated by researchers in each field. While this is possible within a college, the

initial approach taken here was to limit the investigation to those variables associated with educational research in general and those for which particular subject area competence was not required in order to accurately code the data. To complete a detailed set of variables from those defined in this study, area specialists would need only add those variables on which they were best qualified to judge.

In all, twenty-five variables were included in the research instrument constructed for this study. Ten were classified as external and fifteen as internal. For each variable, categories were defined in an effort to construct mutually exclusive and exhaustive subsets. The instrument was pilot tested with a small sample of 1965 data and minor revisions for formating made. Each variable and category was numbered so that the data, when encoded, could be analyzed by computer programs.

PROCEDURES

The doctoral dissertations from 1965 and 1970 at the University of Maryland were used as an example of the data collection and analysis procedures. All dissertations completed in these two years were included in the data collection: 31 in 1965 and 85 in 1970. While the time unit for sampling dissertations is solely based upon the user's interests and needs, the use of two time periods bounding some interval can provide a measure of change over time.

The abstract for each dissertation was used to provide as much of the information as possible. Some variables, such as the kind of statistics used, if not in the abstract, were then found in the dissertation. Data were

transcribed directly onto computer coding sheets and later analyzed with a contingency table program.

FINDINGS

Tables 1 and 2 contain the data distributions for internal and external variables, respectively. Nine of the twenty-five variables showed a change of mode from the first year to the second. They were:

1. age: graduates became younger,
2. department: Industrial Education became second in size to Human Development in number of graduates,
3. length of dissertation: dissertations became shorter,
4. sample size: samples became smaller,
5. number of hypotheses posed: fewer were posed in 1970,
6. number of hypotheses supported: fewer were supported in 1970,
7. form of criterion: more diversity in criteria were reported in 1970,
8. control of independent variables: fewer variables were manipulated in 1970,
9. allocation of subjects to treatment groups: the use of intact classrooms was smaller in 1970 but the use of preselected groups was larger.

Three variables showed a significant difference in distribution over the two years (X^2 significant at $p = .05$). They were:

1. degree: a predominant number of Ed.D. degrees in 1965, but a closer split between Ed.D. degrees and Ph.D. degrees in 1970,
2. rank of advisor: fewer assistant and full professors but more associate professors in 1970,
3. statistical consultation: fewer consultations outside of the college and more within the research department in 1970 (also, a larger department in 1970).

In addition, the data indicate an increase in the percentages of students using affective and psychomotor types of variables, a high constancy in the percentages of students using control groups and multiple criterion measures, a low constancy in the percentage of students using random assignments, a more popular Ph.D. program, younger graduates, a move in the direction of getting more women as students and advisors, and greater use of the measurement and statistics faculty on dissertation committees.

DISCUSSION

Many changes took place in the external variables between 1965 and 1970: fewer in the internal variables. For college administrators, these data can be incorporated into a review of the goals of the graduate program. For individual departments the data give a broad overview of the research variations in the college during the two years, and can be compared with subsets of data on each department. (This data was analyzed but is not presented here.) For those interested in educational research, the data indicate a wide range of questions to be considered: how can the reporting of reliability estimates for the measurement instruments be increased, what is the relation between research hypotheses being supported and other of the research variables, are sampling methods appropriate for the statistics used, what methodologies and analyses reported in other research may be used in the research reported in the dissertations?

Speculations may be offered as to why some of these results occurred. For example, an increase in the number of Ph.D. degrees could be due to:

---an increase in the number of positions open to Ph.D.s.

---the omission of a language requirement for the Ph.D. program,

---an increase in the commitment of graduate students to educational research,

or some other cause or causes. Similarly, a decrease in sample size could be due to:

---an increase in the reluctance from school authorities to use school children as subjects in research,

---an increase in the use of group means as the sampling unit, in place of individual subject scores,

---an increase in the number of repeated measures designs or case studies,

or some other cause or causes. Such speculations would need further investigation. Subsequent research might be directed to exploring these areas by use of questionnaires sent to the dissertation authors. In addition, in any refinement of the data collecting instrument, the identity of main variables and measuring instruments, power, and magnitude of effects would be well to be added.

TABLE 1

PERCENTAGES AND FREQUENCIES FOR TEN EXTERNAL VARIABLES SELECTED FROM DOCTORAL DISSERTATIONS AT THE UNIVERSITY OF MARYLAND

	MODE	VARIABLE	1965 PERCENTAGE	1965 FREQUENCY	1970 PERCENTAGE	1970 FREQUENCY
1.	Year		100.0	31	100.0	85
2.	Sex '65,'70	Male	77.4	24	72.9	62
		Female	22.6	7	27.1	23
*3.	Age	20-29	6.5	2	15.3	13
	'70	30-39	35.5	11	44.7	38
	'65	40-49	41.9	13	31.8	27
		50-	16.1	5	8.2	7
*4.	Department	Admin., Super. & Curr.	22.6	7	20.0	17
		Education	6.5	2	1.2	1
		Early-Child.- Elem.	16.1	5	9.4	8
		Counseling & Per. Ser.	6.4	2	7.1	6
	'70	Human Development	19.4	6	30.6	26
	'65	Industrial Education	25.8	8	12.9	11
		Secondary Education	3.2	1	16.6	14
		(Math)	(3.2)	(1)	(7.1)	(6)
		(Music)			(2.4)	(2)
		(Science)			(5.9)	(5)
		(Soc. St.)			(1.2)	(1)
		Special Education			1.2	1
		Measurement & Statistics			1.2	1
**5.	Degree	Ph.D.	22.6	7	45.9	39
	'65,'70	Ed.D.	77.4	24	54.1	46
6.	Dissertations/Advisor					
	'65,'70	One	55.6	10	34.2	13
		Two	22.2	4	29.0	11
		Three	16.6	3	21.0	8
		Four	5.6	1	13.2	5
		Six		(18 advisors)	2.6	1 (38 advisors)
**7.	Rank of Advisor					
	'65,'70	Professor	71.0	22	57.7	49
		Associate Professor	12.9	4	38.8	33
		Assistant Professor	16.1	5	3.5	3

*Change in mode

**X^2 significant at p = .05

TABLE 1
(continued)

	MODE	VARIABLE	1965 PERCENTAGE	1965 FREQUENCY	1970 PERCENTAGE	1970 FREQUENCY
8.		**Sex of Advisor**				
	'65,'70	Male	100.0	31	89.4	76
		Female	.0	0	10.6	9
**9.		**Acknowledged Consultation on Statistics & Design**				
		None	35.6	11	31.7	27
		Outside of the College	25.9	8	11.8	10
	'65,'70	Research Department	38.5	12	56.5	48
		(Mr. 1)	(9.7)	(3)	(.0	(0)
		(Mr. 2)	(19.4)	(6)	(23.5)	(20)
		(Mr. 3)	(9.7)	(3)	(10.6)	(9)
		(Mr. 4)			(5.9)	(5)
		(Mr. 5)			(8.2)	(7)
		(Mr. 6)			(5.9)	(5)
		(Mr. 7)			(2.4)	(2)
*10.		**Number of Pages in Dissertation (Excluding Appendixes)**				
		0- 49	3.2	1	5.9	5
	'70	50- 99	29.0	9	47.1	40
	'65	100-149	45.2	14	32.9	28
		150-199	19.4	6	9.4	8
		200-249	.0	0	1.2	1
		250-299	3.2	1	3.5	3

TABLE 2

PERCENTAGES AND FREQUENCIES FOR FIFTEEN INTERNAL VARIABLES SELECTED FROM DOCTORAL DISSERTATIONS AT THE UNIVERSITY OF MARYLAND

	MODE	VARIABLE	1965 PERCENTAGE	1965 FREQUENCY	1970 PERCENTAGE	1970 FREQUENCY
*1.		Sample size: Does Not Apply (DNA)	6.5	2	11.8	10
	'70	1- 49	6.5	2	27.1	23
	'70	50- 99	32.2	10	27.1	23
	'65	100- 199	35.5	11	12.9	11
		200- 399	16.1	5	12.9	11
		400- 999	.0	0	5.9	5
		1000-9999	3.2	1	1.2	1
		9999-			1.2	1
		None Reported				
*2.		Number of Research Hypotheses				
		None	16.1	5	22.4	19
	'70	1- 3	19.4	6	34.1	29
	'65	4- 6	38.7	12	22.4	19
		7- 9	6.5	2	12.9	11
		10-14	9.7	3	3.5	3
		15-19	3.2	1	3.5	3
		20-24	3.2	1	.0	0
		25-29	.0	0	1.2	1
		30-34	.0	0	.0	0
		35-39	3.2	1	.0	0
*3.		Number of Research Hypotheses Supported				
	'70	None	16.1	5	37.6	32
		1	12.9	4	18.8	16
	'65	2	25.8	8	12.9	11
		3	16.1	5	8.2	7
		4	22.6	7	10.6	9
		5	.0	0	3.5	3
		6	.0	0	3.5	3
		7	.0	0	3.5	3
		8	.0	0	1.2	1
		9	3.2	1	.0	0
		10	3.2	1	.0	0
		Average Ratio: $\frac{\text{Supported}}{\text{Reported}}$	(46.0)		(36.0)	
4.		Reliabilities Reported				
		Does Not Apply	16.1	5	16.5	14
		None	22.6	7	23.5	20
	'65,'70	One on More	61.3	19	60.0	51

*Indicates change of mode.

TABLE 2
(continued)

	MODE	VARIABLE	1965 PERCENTAGE	1965 FREQUENCY	1970 PERCENTAGE	1970 FREQUENCY
5.		**Level of Significance Used**				
		Does not apply	16.1	5	18.8	16
		.01	16.1	5	7.1	6
		.025	.0	0	1.2	1
	'65,'70	.05	67.8	21	63.5	54
		.10	.0	0	9.4	8
*6.		**Form of Criterion**				
		Does not apply	16.1	5	10.6	9
	'65	Mult. Choice,TF,Checklist	35.5	11	15.3	13
		Ratings by Observers	3.2	1	5.9	5
		Performance	.0	0	8.2	7
		Short Answer	9.7	3	11.8	10
		Sort, Rank order, Likert	16.1	5	14.0	12
		GPA	.0	0	2.4	2
	'70	Two or more forms	19.4	6	31.8	27
7.		**Criterion in Taxonomy**				
		Does not apply	16.1	5	11.8	10
	'65,'70	Cognitive	64.5	20	51.8	44
		Affective	19.4	6	17.6	15
		Psychomotor			4.7	4
		Cognitive & Affective			9.4	8
		Cognitive & Psychomotor			4.7	4
8.		**Number of Criterion Variables**				
		Does not apply	9.7	3	14.1	12
		One	12.9	4	20.0	17
	'65,'70	More than one	77.4	24	65.9	56
*9.		**Control of Independent Variables**				
		Does not apply	6.5	2	11.8	10
	'65	Manipulated	54.8	17	35.3	30
	'70	Not Manipulated	38.7	12	52.9	45
*10.		**Allocation of Subjects to Groups**				
		Does not apply	12.9	4	14.1	12
		Random	16.1	5	27.1	23
	'65	Classrooms	35.5	11	8.2	7
		Matched Groups	3.2	1	1.2	1
	'70	Preselected Groups	25.8	8	34.1	29
		Available Sample	6.5	2	15.3	13
11.		**Control Groups**				
		Does not apply	22.6	7	17.6	15
		None	.0	0	7.1	6
		Control	22.6	7	5.9	5
	'65,'70	Contrast	54.8	17	68.2	58
		Control & Contrast	.0	0	1.2	1

TABLE 2
(continued)

MODE	VARIABLE	1965 PERCENTAGE	1965 FREQUENCY	1970 PERCENTAGE	1970 FREQUENCY
12.	**Campbell-Stanley Design Classification**				
	Does not apply	12.9	4	15.3	13
	Design 1 X 0	.0	0	4.7	4
	Design 2 0 X 0	.0	0	3.5	3
'65,'70	Design 3 X 0; 0	38.7	12	37.6	32
	Design 4 R 0 X 0; R 0 0	9.7	3	10.6	9
	Design 5 Solomon Four	.0	0	1.2	1
	Design 6 R X 0; R 0	3.2	1	15.3	13
	Design 7 Time Series	3.2	1	1.2	1
	Design 10 0 X 0; 0 0	29.0	9	10.6	9
	Design 11 Counterbalanced	3.2	1	.0	0
13.	**Model**				
	Does not apply	25.8	8	27.1	23
'65,'70	Analysis of Variance Model	45.2	14	45.8	39
	Analysis of Covariance Model	16.1	5	7.1	6
	General Regression Model	.0	0	5.9	5
	Two or more of the above	12.9	4	14.1	12
14.	**Parametric**				
	None	9.7	3	21.2	18
'65,'70	Parametric	71.0	22	71.8	61
	Nonparametric	3.2	1	3.5	3
	Both	16.1	5	3.5	3
15.	**Statistics**				
	None	6.4	2	11.8	10
	F	22.6	7	28.3	24
	t	6.4	2	4.7	4
	Chi Square	6.4	2	1.2	1
	R or r	6.4	2	3.5	3
	%	3.2	1	9.4	8
	Mann Whitney U, Runs	3.2	1	3.5	3
'65,'70	F & one or more other statistics	45.2	14	37.6	32